

**FACT SHEET FOR NPDES PERMIT WA-003129-1
TENASKA WASHINGTON PARTNERS, L.P.**

SUMMARY

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INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System of permits (NPDES permits), which is administered by the Environmental Protection Agency (EPA). The EPA has delegated responsibility to administer the NPDES permit program to the State of Washington on the basis of Chapter 90.48 RCW which defines the Department of Ecology's authority and obligations in administering the wastewater discharge permit program.

The regulations adopted by the State include procedures for issuing permits (Chapter 173-220 WAC), water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC), and sediment management standards (Chapter 173-204 WAC). These regulations require that a permit be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least thirty days before the permit is issued (WAC 173-220-050). The fact sheet and draft permit are available for review (see Appendix A--Public Involvement of the fact sheet for more detail on the Public Notice procedures).

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in this review have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Comments and the resultant changes to the permit will be summarized in a Response to Comments.

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<u>GENERAL INFORMATION</u>	
Applicant	Tenaska Washington Partners, L.P.
Facility Name and Address	Tenaska Washington Cogeneration Facility 5105 Lake Terrell Road Ferndale, WA 98248
Type of Facility:	Cogeneration – Steam and Electricity Production
SIC Code	4911
Process Wastewater Discharge Location Outfall 001	Waterbody name: Strait of Georgia Latitude: 48° 49' 36" N Longitude: 122° 42' 57" W.
Water Body ID Number (001)	WA-01-0010
Stormwater Discharge Location Outfall 002	Discharges into an unnamed tributary which empties into Lummi Bay Waterbody name: Lummi Bay Latitude: 48° 49' 42" N Longitude: 122° 40' 52" W.
Watercourse ID Number (002)	Unnamed tributary – AT56DW Puget Sound – 390KRD

BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

HISTORY

Ecology was notified, by a letter dated March 18, 1994 that the Tenaska facility had begun to discharge from Outfall 001. The facility was in a start-up mode and was not commercially operational until April 7, 1994. The stormwater outfall (002) was placed into service in June of 1994. The original permit was issued on June 10, 1992 with an effective date of July 1, 1993. The NPDES permit effective date was changed to January 1, 1994 by a permit modification issued April 9, 1993. Tenaska requested a permit modification on July 7, 1994 to incorporate a corporate address change. The permit was revised on October 5, 1994 to include the address change and several additional items. Those changes included removal of the salmonid species from the list of test organisms for the acute biomonitoring study, extension of the timeframe for conducting the discharge reduction/elimination study, and correction of the sample type for the oil and grease test. On April 30, 1995 the monitoring schedule for several parameters was reduced from daily monitoring as allowed by permit condition S1.F note f. Total Suspended Solids (TSS) testing was reduced to 3 times per week. Oil and Grease and zinc monitoring was reduced to 2 days per week. EPA classifies the facility as a minor industrial facility.

INDUSTRIAL PROCESS

Tenaska is a combined cycle, natural gas-fired cogeneration facility, which was constructed on 14 acres of land adjacent to the Tosco Refining Company. Natural gas, supplied via pipeline is the cogeneration fuel. Fuel Oil is also stored on-site as a backup fuel. Tenaska supplies up to 150,000 pounds of steam per hour to TOSCO and up to 245 megawatts of electricity to Puget Power. Electricity is produced primarily by two sets of gas-fired turbine generators. Exhaust from the turbines is used to produce steam. Some of the steam is used for export to TOSCO while the rest is used to produce electricity by a steam turbine. The facility consists of two combustion turbines, two heat recovery steam generators, one steam turbine, two auxiliary boilers, an electrical substation, and a fuel unloading and storage area. The fuel oil serves as a backup fuel for the combustion turbines. The facility has typically been shut down around Thanksgiving and has not resumed electricity generation until winter usage increases the demand for electricity. The fall shutdown typically happens after the air conditioning demand has diminished in California. Typically they are down until the upswing for heating demand in approximately January. Amongst other variables, the availability of cheap hydropower affects the demand for electricity production at Tenaska. The facility is staffed by approximately 23 individuals including a plant manager, operations supervisor, administrative assistant, purchasing assistant, office supervisor, lead control operator, control room operators, instrumentation and electrical technicians, maintenance staff, and a full time lab technician. Products stored on site in bulk quantities include: Number 2 fuel oil (2,100,00 gallons), anhydrous ammonia (12,000 gallons), caustic sodium hydroxide (6000 gallons), and sulfuric acid (6000 gallons). Each of these storage tanks includes adequate containment. The fuel tank storage area has an isolation

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drain valve which discharges to the stormwater system. This area is not drained unless it is first checked for spilled material. The number 2 fuel oil is for backup purposes only. The chemicals are stored in tanks with a concrete curbed impoundment, which can be drained to the chemical waste collection and treatment sump in the event of a spill. A variety of cooling water chemicals are used and stored on site. They include slimicides, biocides, and corrosion inhibitors. Wastewater treatment chemicals include sodium hypochlorite, soda ash, polymers and bentonite. Other chemical products stored on site include lubrication oils, hydraulic fluid, gas turbine cleaner, isopropyl alcohol, transformer and other electrical oils.

WASTEWATER SOURCES AND TREATMENT

Wastewater sources include cooling water blowdown, oil/water separator effluent, wastewater return flows, backwashes from the water treatment system, and discharges into the chemical wastewater sump. Drainage from areas around the ammonia storage tank, the water demineralizer system (acid and caustic), laboratory, battery room, clarifier area and the circulating chemical feed building is gravity fed into the chemical wastewater sump. All areas with a potential for oil spills are curbed and drain into the oil/water separator. These areas include the gas turbine area, air compressor area, transformer pads, and fuel oil filter and pump pads.

Process wastewaters are treated with various chemical/physical treatment methods depending on the nature of the pollutants. The oil water sewer collects wastewater from the process area (pump pads and process drains) which could potentially have oily pollutants. This wastewater flows through an oil water separator to remove oil and greases. A disposal contractor periodically removes oil. The underflow effluent from the oil/water separator wastewater is discharged to a drain sump, which is pumped to the wastewater tank. Areas of the facility which have a potential for a chemical spill are curbed and surfaced with discharges going into the chemical waste sump within the Water Treatment Building. Wastewater from the regeneration of anion and cation resin beds and the backwashing of the activated charcoal beds within the plant's demineralization system are also routed to the chemical waste sump. This wastewater is pumped to the neutralization tank where the wastewater is neutralized in a batch process. The neutralization tank effluent is discharged into the wastewater tank. The commingled wastewater is then clarified in a unit identified as a solids contact unit. The solids from this unit are thickened in a sludge thickener and then routed through a sludge press. The sludges are disposed of in the local landfill. Effluent from the solids contact units is polished in a filtration system and is then discharged into TOSCO's wastewater effluent line.

Stormwater from areas other than process units is routed to a retention basin. It then flows via an underflow weir through a biofiltration swale and then is discharged. The retention basin was cleaned out in October and November 1998. Sand and sediment was removed by vacuum truck and sent off-site for thermal desorption. The sand and sediment was tested to ensure compliance with dangerous waste regulations. Several liner tears were repaired during the cleanout operation. Additional operations and maintenance procedures were developed for the stormwater basin after the completion of the liner maintenance.

Sanitary wastewater is treated in a mound system, which is regulated by the Whatcom County Health Department.

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DISCHARGE OUTFALL

Tenaska's treated process wastewater is discharged into TOSCO's outfall, which discharges into the Strait of Georgia. Tosco has a submerged diffuser consisting of a single pipe with four diffuser ports. A dilution study was updated by Tosco's consultant in November 1995 and was approved by Ecology in February 1996.

Treated stormwater is discharged to a ditch along Lake Terrell Road. From Lake Terrell Road, the discharge is routed through TOSCO property in a drainage ditch, which flows into a ditch along Slater Road. Within this ditch it commingles with stormwater from the TOSCO facility. This ditch discharges to Lummi Bay. Prior to being discharged into marine waters the ditch may flow through a wetland area.

A map of the location of Tosco's wastewater discharge outfall and the discharge point of Tenaska's stormwater can be found in **Appendix C**.

PERMIT STATUS

The previous permit for this facility was issued on June 10, 1992 and modified on April 9, 1993 and again on July 7, 1994. The previous permit placed effluent limitations on the discharges as shown in the following tables. For the first 6 months of operation the facility was subject to less stringent permit limitations. The following limitations were effective on July 1, 1994:

PROCESS WASTEWATER DISCHARGE 001		
PARAMETER	DAILY AVERAGE	DAILY MAXIMUM
Total Suspended Solids (mg/l)	20	35
Oil and Grease (mg/l)	10	15
Total Zinc (mg/l)	1.0	1.0
Total Zinc (pounds/day)	1.3	1.3
Total Residual Chlorine (mg/l)	0.2	0.2
pH	Within the range of 6.0 to 9.0	

STORMWATER DISCHARGE 002		
PARAMETER	DAILY AVERAGE	DAILY MAXIMUM

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Total Suspended Solids (mg/l)	15	25
Oil and Grease (mg/l)	10	15
pH	Within the range of 6.0 to 9.0	

An application for permit renewal was submitted to the Department on December 11, 1996 and accepted by the Department on June 12, 1997.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The facility last received a sampling inspection on February 17, 1999, which included splitting the facility's composite sample of the process wastewater and stormwater and collecting grab samples of both discharges. The discharge was found to be well within permit limits. The last non-sampling inspection was completed on February 1, 2000.

During the history of the previous permit, the Permittee has generally remained in compliance based on Discharge Monitoring Reports (DMRs) submitted to the Department and inspections conducted by the Department. The following table summarizes the incidences of noncompliance:

OUTFALL 001	PARAMETER	EXPLANATION OF NON-COMPLIANCE
8/5/95	TSS 63.2 mg/l	Sand and carbon filter located at the discharge pump failed resulting in a discharge of sand and carbon material into the sump where sampling occurs. While the sample had an excessive amount of solids the actual effluent did not as confirmed by a grab sample which measured 3.6 mg/l.
9/21/96	TSS 93 mg/l	Plant upset – Calcium sulfate from cooling tower blowdown present in the wastewater in higher than normal quantities – not a water quality problem- turbidity meter installed to ensure no repeats
OUTFALL 002	PARAMETER	EXPLANATION OF NON-COMPLIANCE
6/13/95	TSS 25.6	TSS in excess of the monthly average limit of 15

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		mg/l and the daily maximum of 25 mg/l – algae buildup in the pond caused the exceedance
8/19/97	TSS 22.4 mg/l	TSS in excess of the monthly average limit of 15 mg/l although it did not exceed the daily maximum of 25 mg/l – algae buildup in the pond caused the exceedance
5/13/98	TSS average 19.2 mg/l; TSS maximum 34.8 mg/l	TSS in excess of both the monthly average and the daily maximum. Occurred during a cleanout of the sludges at the bottom of the pond. Operation and maintenance procedures have been modified.

The facility was last inspected by Ecology's laboratory accreditation staff on July 21, 1999 and was accredited effective August 31, 1999. Tenaska is accredited for testing total residual chlorine, oil & grease (Method 413.1), pH, total suspended solids, and zinc (Methods 8009 and 3500 – Zn F).

The previous permit also required several special studies to be completed during the permit term. Submittals required by the permit are included in the following table:

Submittal Requirement	Date Required	Date Submitted
Notification of full operation startup date	Within 7 full days following full operation startup	3/18/94 (Outfall 001) 6/14/94 (Outfall 002)
Semiannual salmonid bioassay		A summary is included later in the fact sheet
Solid Waste Control Plan	7/1/93 and 12/10/96	6/29/93, 12/11/96
Treatment System Operating Plan	7/1/93	6/29/93
SPCC Plan	7/1/93 and annual update if significant changes	6/29/93, 12/1/94
Effluent Characterization Study	Within 6 months of initial sampling, stormwater (002) sampling date extended until 2/7/95 by letter dated 9/30/94	(Outfall 001) 12/94 (Outfall 002) 3/17/95
Discharge Reduction/Elimination Study Plan	7/1/93	6/29/93
Discharge	Within 60 days of departmental	Discussed below

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Submittal Requirement	Date Required	Date Submitted
Reduction/Elimination Study	approval of the plan	
Discharge Reduction/Elimination Study Report	Within 60 days of completion of the study	Discussed below
Acute Biomonitoring Study	Conducted every other month for one year using 2 organisms – beginning within six months of facility startup – reports within 60 days of testing	A summary is included later in the fact sheet
Chronic Biomonitoring Study	Conducted four times in one year with three species in the second year of operation	A summary is included later in the fact sheet
NPDES permit renewal application form	180 days prior to expiration date of the permit	12/11/96

Ecology did not formally approve the Discharge Reduction/Elimination Study Plan. Tenaska implemented elements of the plan throughout the permit cycle. A final report was submitted on February 7, 2000. Volume reduction measures implemented include improvements in the circulating cooling water chemistry program, diversion of anion demineralizer rinse water from the wastewater system to the filtered water tank, and changing the operation of the cooling tower from conventional boiler blowdown operation to cascading heat recovery steam generator blowdown. The diversion of the anion demineralizer rinse water had two effects: direct reduction of water usage and indirect water use reduction. Recycling the rinse water has more than doubled the time necessary between demineralizer regenerations. The total daily reduction in water usage due to these operational changes exceeds 65,000 gallons/day.

Each of the operational changes above also resulted in reduction of pollutants treated in the wastewater system and ultimately discharged into Tosco's effluent pipeline. Circulating water blowdown reductions also resulted in reduction of discharge of water treatment chemicals. Natural alkalinity allowed the reduction of use and subsequent discharge of amine, phosphate and tolytriazole. The pH of the circulating water was reduced resulting in a reduction of the use of chemical dispersants. Tenaska also installed an oxidation reduction potential meter which reduced the use of sodium hypochlorite as a biocide and allowed for Tenaska to discontinue use of all other biocides. Reductions in the frequency of demineralizer regeneration have resulted in the reduction of use and discharge of regenerated salts. The cascading boiler blowdown operation is a chemical reuse technique that reduces boiler chemical discharge by two thirds.

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SPILL EVENTS

On July 21, 1994 a diesel spill occurred at the Tenaska facility. A flange gasket ruptured on a valve in the fuel oil transfer line to combustion turbine 1B at the fuel oil unloading skid, resulting in a release of approximately 400 gallons of #2 diesel fuel.

Approximately half of the material sprayed inside the skid unloading catch basin with the remaining onto the adjacent ground. Plant personnel took immediate action to stop the release and contain the spill in accordance with their SPCC Plan. They reported the spill to Ecology's Northwest Regional Office. AccuChem, a spill contractor, was retained to conduct site cleanup and prepare the necessary reports. A Release and Site Assessment Report and Site Characterization and Remedial Action Report dated August 15, 1994 was submitted to Ecology's Toxic Cleanup Program. Ecology assigned an incident number of 16688.

The cause of the gasket rupture was a buildup of static pressure in the oil-filled line without a pressure relief device installed. Pressure relief valves were installed in both transfer lines after the spill occurred.

A plan was developed to collect residual diesel under the pump foundation and catchment basin of the unloading skid and to monitor the concentration of the residual diesel. The plan was reviewed and approved by the Toxic Cleanup Program. Three sumps were installed, two just immediately north of the concrete foundation and one downgradient, directly south of the point of release and across the road for collection of diesel and monitoring of perched groundwater. Samples in 1996 were less than 1.0 mg/l TPH. A consulting firm, EMCON, has continued to monitor the site. Data from 1996 through 1998 showed some total petroleum hydrocarbon (TPH) exceedances of the Ecology Model Toxics Control Act (MTCA) Method A Cleanup Level of 1.0 mg/liter. Nine quarters of groundwater monitoring have shown decreasing levels of TPH. The last four quarters have been well below the regulatory limit. By a letter dated May 22, 2000, Ecology agreed that Tenaska could discontinue groundwater monitoring at this spill site. Cleanup may be required in the future when the concrete structures are removed, if soil levels are above the regulatory limits.

In November 1998 a pipe leak was discovered at the fuel loading station. The soil around the pipe was excavated to repair the break. Test results of the soils remaining show an acceptable level of risk and no further action was required.

WASTEWATER CHARACTERIZATION

The following tables summarize the wastewater characterization presented in the NPDES application form for outfalls 001 and 002. Additional monitoring information for both discharges is available in **Appendix D**.

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Table 1: Wastewater Characterization Outfall 001

Parameter	# of Samples	Maximum Daily Concentration	Long Term Average Concentration
Biochemical Oxygen Demand (BOD) mg/l	1	≤ 1.0	
Chemical Oxygen Demand (COD) mg/l	1	≤ 5.0	
Total Organic Carbon (TOC) mg/l	1	≤ 5.0	
Total Suspended Solids (TSS) mg/l	344	63	2.5
Ammonia (as Nitrogen) mg/l	1	≤ 0.1	
Temperature °C	247 97	22.2 (winter) 25.6 (summer)	
Total Chlorine Residual mg/l	344	0.03	0.01
Antimony µg/l	2	≤ 100	
Arsenic µg/l	1	≤ 4	
Beryllium µg/l	2	≤ 5	
Cadmium µg/l	2	≤ 5	
Total Chromium µg/l	2	≤ 10	
Copper µg/l	1	7.69	
Lead µg/l	1	2.2	
Mercury µg/l	2	≤ 1	
Nickel µg/l	1	9.87	
Selenium µg/l	1	≤ 5	
Silver µg/l	2	≤ 20	
Thallium µg/l	1	≤ 150	
Zinc µg/l	344	280	
Cyanide µg/l	2	≤ 10	
Phenols µg/l	2	≤ 10	
Oil and Grease mg/l	100	2.5	0.16
pH	344	6.32 Minimum	6.77 Maximum
No priority pollutant organics were found in detectable quantities.			

Table 2: Wastewater Characterization Outfall 002

Parameter	# of Samples	Maximum Daily Concentration	Long Term Average Concentration
Biochemical Oxygen Demand (BOD) mg/l	1	≤ 1	
Chemical Oxygen Demand (COD) mg/l	1	13	
Total Suspended Solids (TSS) mg/l	41	25.6	9.5
Total Nitrogen mg/l	1	≤ 1	
Nitrate/Nitrite mg/l	1	1.4	
Total Phosphorous mg/l	1	240	
Total Chlorine Residual mg/l	1	.02	
Copper µg/l	5	13	≤ 9
Iron µg/l	3	600	400
Nickel µg/l	5	13	≤ 9.6
Zinc µg/l	6	950	276
Oil and Grease mg/l	41	1.8	0.86

PROPOSED PERMIT LIMITATIONS

Federal and State regulations require that effluent limitations set forth in a NPDES permit must be either technology- or water quality-based. Technology-based limitations are based upon the treatment methods available to treat specific pollutants.

Technology-based limitations are set by regulation or developed on a case-by-case basis (40 CFR 125.3, and Chapter 173-220 WAC). Water quality-based limitations are based upon compliance with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200 WAC), Sediment Quality Standards (Chapter 173-204 WAC) or the National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992). The more stringent of these two limits must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

The limits in this permit are based in part on information received in the application. The effluent constituents in the application were evaluated on a technology- and water quality-basis. The limits necessary to meet the rules and regulations of the State of Washington were determined and included in this permit. Ecology does not develop effluent limits for all pollutants that may be reported on the application as present in the effluent. Some pollutants are not treatable at the concentrations reported, are not controllable at the source, are not listed in

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regulation, and do not have a reasonable potential to cause a water quality violation. Effluent limits are not always developed for pollutants that may be in the discharge but not reported as present in the application. In those circumstances the permit does not authorize discharge of the non-reported pollutants. Effluent discharge conditions may change from the conditions reported in the permit application. If significant changes occur in any constituent, as described in 40 CFR 122.42(a), the Permittee is required to notify the Department of Ecology. The Permittee may be in violation of the permit until the permit is modified to reflect additional discharge of pollutants.

DESIGN CRITERIA

In accordance with WAC 173-220-150 (1)(g), flows or waste loadings shall not exceed approved design criteria.

The design criteria for this treatment facility are taken from Exhibit C "Wastewater Collection and Treatment – System Description" and Exhibit D "Chemical Waste Collection and Treatment – System Description" submitted with the NPDES permit application.

Table 2: Design Standards for Process Wastewater Treatment Units.

Parameter	Average Design Capacity	Maximum Capacity
Solids Contact Unit (Clarifier)	225 gpm / 324,000 gpd	300 gpm / 432,000 gpd
Pumps (2) (each rated at)	225 gpm / 324,000 gpd	300 gpm / 432,000 gpd
Wastewater filter	225 gpm / 324,000 gpd	300 gpm / 432,000 gpd
Wastewater Tank		100,000 gallons
Solids Contact Effluent	≤ 10 NTU	
Effluent TSS concentration	<20 mg/l	
Effluent Temperature	75°F	
Effluent pH	pH in the range of 6.0 to 9.0 pH units	

Wastewater flows through the facility have remained within design criteria from plant start-up. The **maximum monthly average** flow from October 1998 through October 1999 was **177,000** gallons per day and the **maximum monthly** flow was **250,000** gallons per day.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

Guidelines for the steam electric power generating point source category (40 CFR 423) were initially published November 19, 1982 and amended July 8, 1983 by the Environmental Protection Agency (EPA). The new source performance standards (NSPS) for the pertinent wastestreams produced by Tenaska are summarized in the table below. The quantity of pollutants discharged may not exceed the quantity determined by multiplying the wastestream flow by the concentration listed in the table.

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NSPS LIMITATIONS		
Parameter	Monthly Average	Daily Maximum
Cooling Water Blowdown		
Free Available Chlorine	0.2 mg/l	0.5 mg/l
Chromium, total	0.2 mg/l	0.2 mg/l
Zinc, total	1.0 mg/l	1.0 mg/l
Low Volume Waste Sources		
Total Suspended Solids	30 mg/l	100 mg/l
Oil & Grease	15 mg/l	20 mg/l

The federal effluent limitations for this category give the permit writer the discretion to express the allowable discharge quantity as a concentration limit rather than a mass limit. The technology-based concentration values in the NSPS section of the federal effluent guidelines were used except as indicated in the following discussion.

The daily average and daily maximum permit limits proposed (see following table) for total suspended solids (TSS), oil and grease, and total residual chlorine are more stringent than the federal guideline allowances. The TSS limitations are the same as the previous permit, which was based on Best Professional Judgement (BPJ). The oil and grease daily average and daily maximum values are the same as the previous permit and reflect State policy. Because the facility has demonstrated that they can meet those limits, they reflect all known, available and reasonable treatment (AKART) methodologies. Federal effluent limitations are based on the free available chlorine test methodology. Tenaska has been required to test for total residual chlorine. The quantity of free available chlorine is either equal to or less than the total residual chlorine of a sample depending on the chemistry of the sample. Therefore, using the total residual chlorine test is at least as stringent as using the free available chlorine test. Chromium is not and has not been used in the industrial process and is not detectable in the effluent. Zinc is not a component of chemical additives in use today. Zinc's inclusion in the federal effluent guidelines was due to the common use of cooling tower biocides, and corrosion and scaling control chemicals containing zinc chloride, zinc dichromate, zinc oxides, zinc sulfate, calcium zinc polyphosphate, potassium zinc polyphosphate, and zinc chloride. These chemicals are no longer in common use or in use at the Tenaska facility. Limits for chromium and zinc have been included in the permit but the monitoring frequency has been reduced to semiannually, the minimum allowed by federal requirements. General Permit Condition G6 requires the facility to submit a new application, or a supplement to the previous application, along with required engineering plans and reports whenever a material change to the facility or in the quantity or type of discharge is anticipated which is not specifically authorized by this permit. This condition requires the facility to report if any process chemical changes would result in a change to the quality or quantity of the discharge, which would include

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adding any zinc or chromium containing compounds. Zinc is also evaluated later in this fact sheet to ensure that water quality standards are being met.

In addition to the above requirements best available treatment economically achievable (BAT) requirements include a condition that the effluent shall not include 126 priority pollutants, with the exception of chromium and zinc, in detectable amounts. Chromium and zinc have specific limits. Tenaska has not had any organic priority pollutants detected in the effluent. Metals have been detected in the effluent at low levels because they are present in the source water and may be incidentally added in the process. Metals detection levels have greatly improved since the federal effluent guidelines were published in 1982. The levels detected are less than the detection levels available during the federal effluent guideline's development process. Metallic parameters were also evaluated to ensure protection of aquatic life and no metal demonstrated reasonable potential to exceed water quality criteria. The permit will include language that requires Tenaska to not have any detectable organic priority pollutants.

The stormwater effluent limitations in the permit are based upon Best Professional Judgement (BPJ), State policy and the facility's demonstrated ability to meet these limitations.

PROPOSED PERMIT LIMITATIONS OUTFALL 001		
Parameter	Monthly Average	Daily Maximum
Total Suspended Solids mg/l	20	35
Oil & Grease mg/l	10	15
Zinc, total mg/l	1.0	1.0
Chromium, total mg/l	0.2	0.2
Total Residual Chlorine	0.2	0.2
pH	Within the range of 6.0 to 9.0	

PROPOSED PERMIT LIMITATIONS OUTFALL 002		
Parameter	Monthly Average	Daily Maximum
Total Suspended Solids mg/l	15	25
Oil & Grease mg/l	10	15
pH	Within the range of 6.0 to 9.0	

SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that waste discharge permits shall be conditioned such that the discharge will meet established Surface Water Quality Standards. The Washington State Surface Water Quality Standards (Chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the surface waters of the state. Surface water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin wide total maximum daily loading study (TMDL).

NUMERICAL CRITERIA FOR THE PROTECTION OF AQUATIC LIFE

"Numerical" water quality criteria are numerical values set forth in the State of Washington's Water Quality Standards for Surface Waters (Chapter 173-201A WAC). They specify the levels of pollutants allowed in a receiving water while remaining protective of aquatic life. Numerical criteria set forth in the Water Quality Standards are used along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limitations, they must be used in a permit.

NUMERICAL CRITERIA FOR THE PROTECTION OF HUMAN HEALTH

The U.S. EPA has promulgated 91 numeric water quality criteria for the protection of human health that are applicable to Washington State (EPA 1992). These criteria are designed to protect humans from cancer and other disease and are primarily applicable to fish and shellfish consumption and drinking water from surface waters.

NARRATIVE CRITERIA

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the State of Washington.

ANTIDEGRADATION

The State of Washington's Antidegradation Policy requires that discharges into a receiving water shall not further degrade the existing water quality of the water body. In cases where the natural conditions of a receiving water are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. Similarly, when the natural conditions of a receiving water are of higher quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. More information on the State Antidegradation Policy can be obtained by referring to WAC 173-201A-070.

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The Department has reviewed existing records and is unable to determine if ambient water quality is either higher or lower than the designated classification criteria given in Chapter 173-201A WAC; therefore, the Department will use the designated classification criteria for this water body in the proposed permit. The discharges authorized by this proposed permit should not cause a loss of beneficial uses.

CRITICAL CONDITIONS

Surface water quality-based limits are derived for the waterbody's critical condition, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or characteristic water body uses.

MIXING ZONES

The Water Quality Standards allow the Department of Ecology to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. Both "acute" and "chronic" mixing zones may be authorized for pollutants that can have a toxic effect on the aquatic environment near the point of discharge. The concentration of pollutants at the boundary of these mixing zones may not exceed the numerical criteria for that type of zone. Mixing zones can only be authorized for discharges that are receiving all known, available, and reasonable methods of prevention, control and treatment (AKART) and in accordance with other mixing zone requirements of WAC 173-201A-100.

The National Toxics Rule (EPA, 1992) allows the chronic mixing zone to be used to meet human health criteria.

DESCRIPTION OF THE RECEIVING WATER

Tenaska's process wastewater (001) discharges to Tosco Refining Company's effluent line. Tosco's effluent discharges to the Strait of Georgia, which is designated as a Class AA marine receiving water in the vicinity of the outfall. Other nearby point source outfalls include ARCO Petroleum Products Company and Intalco Aluminum Company.

Characteristic uses include the following:

Water supply (domestic, industrial, agricultural); stock watering; fish migration; fish and shellfish rearing, spawning and harvesting; wildlife habitat; primary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation. Water quality of this class shall markedly and uniformly exceed the requirements for all or substantially all uses.

The stormwater outfall (002) discharges into a ditch alongside Lake Terrell Road. From Lake Terrell Road, the discharge drains through TOSCO property in a ditch, which flows into a ditch along Slater Road. Within this ditch it commingles with stormwater from the TOSCO facility. This ditch drains into an unnamed tributary which classifies as a Class AA freshwater receiving water. This unnamed tributary discharges to Lummi Bay, which

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is designated as a Class AA receiving water in the vicinity of the outfall with characteristic uses as described above.

SURFACE WATER QUALITY CRITERIA

Applicable criteria are defined in Chapter 173-201A WAC for aquatic biota. In addition, U.S. EPA has promulgated human health criteria for toxic pollutants (EPA 1992). Criteria for this discharge are summarized below:

Fecal Coliforms	14 organisms/100 ml maximum geometric mean (marine water)
	100 organisms/100 ml maximum geometric mean (fresh water)
Dissolved Oxygen	7 mg/L minimum (marine water)
	9.5 mg/L minimum (freshwater)
Temperature	13 degrees Celsius maximum or incremental increases above background (marine water)
	16 degrees Celsius maximum or incremental increases above background (freshwater)
pH	7 to 8.5 standard units (marine water)
	6.5 to 8.5 standard units (freshwater)
Turbidity	less than 5 NTU above background
Toxics	No toxics in toxic amounts

Lummi Bay and the Straits of Georgia are listed on the 1998 CWA 303(d) list. Fecal coliform is the pollutant of concern in Lummi Bay, which needs to be addressed by the total maximum daily load (TMDL) process. The Strait of Georgia is listed for a variety of pollutants found in the sediments at the Intalco Aluminum Company. The following pollutants were found in the sediments around the Intalco discharge outfall: phenanthrene, pyrene, indeno(1,2,3-cd) pyrene, dibenzo (a,h) anthracene, benzo (g,h,i) perylene, benzo (a) pyrene, benzo (a) anthracene, chrysene, fluoranthene, benzo (b,k) fluoranthene, phenanthrene, acenaphthene, total PCBs, dibenzofuran, cadmium, and fluorene. The Strait of Georgia was also listed for a sediment bioassay failure at the edge of the mixing zone of the ARCO Refinery. Intalco completed a sediment analysis plan, has taken some additional samples, and has submitted a report. Ecology is evaluating the data and may require some additional sediment biomonitoring to be completed. ARCO also has additional sediment monitoring included in its recently issued permit.

Process Wastewater Discharge - Outfall 001

Pollutant concentrations in the proposed discharge meet water quality criteria with technology-based controls that the Department has determined to be AKART when factoring in the applicable dilution available at the discharge outfall. A mixing zone that applies to Tenaska's process wastewater outfall is authorized in the permit in

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accordance with the geometric configuration, flow restriction, and other restrictions for mixing zones in Chapter 173-201A WAC.

In November 1995 an engineering consultant prepared a dilution analysis for Tosco. The report was entitled, **Final Report Dilution Ratio and Reasonable Potential Analysis**.

The dilution factors of effluent to receiving water have been determined at the critical condition by the use several different EPA approved mixing models. Following Ecology review and comments mixing zone values were determined for the Tosco facility. Those mixing zones apply to the Tenaska facility since it discharges its effluent into Tosco's discharge line. The mixing zone values are tabulated as follows:

	Available Dilution
Acute Criteria	30
Chronic Criteria	135
Human Health Criteria - Carcinogen	135
Human Health Criteria - Non-carcinogen	135

Pollutants in an effluent may affect the aquatic environment near the point of discharge (near field) or at a considerable distance from the point of discharge (far field). Toxic pollutants, for example, are near-field pollutants--their adverse effects diminish rapidly with mixing in the receiving water. Conversely, a pollutant such as BOD is a far-field pollutant whose adverse effect occurs away from the discharge even after dilution has occurred. Thus, the method of calculating surface water quality-based effluent limits varies with the point at which the pollutant has its maximum effect.

The derivation of surface water quality-based limits also takes into account the variability of the pollutant concentrations in both the effluent and the receiving water.

The impacts of temperature, pH, chlorine, and metals were determined as shown below, using the dilution factors at critical conditions described above.

Temperature

For Class AA marine water, the water quality standards state the temperature shall not exceed 13°C due to human activities. When natural conditions exceed 13°C no temperature increases will be allowed which will raise the receiving water temperature greater than 0.3°C. Incremental temperature increases resulting from point source activities shall not, at any time, exceed $t = 8/(T-4)$. T represents the background temperature and represents the highest ambient water temperature in the vicinity of the discharge.

A simple mixing analysis at critical conditions modeled the impact of the discharge on the temperature of the receiving water. Because the effluent is discharged into Tosco's effluent line the analysis includes Tosco's flows. The receiving water temperature critical condition was determined using the 90th percentile value of the temperatures recorded at the ambient monitoring station GRG002. The receiving water temperature at the critical condition is 13.3°C and Tenaska's maximum summertime effluent temperature is 27.2°C. The maximum summertime effluent temperature for the Tosco facility is 25.6°C. The following analysis was complete using average flow values for each facility (Tosco 1.5 MGD, Tenaska 0.117MGD).

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Under average conditions Tenaska's flow contribution is approximately 8% of the total flow discharged. With a dilution of 135:1 at the edge of the chronic zone the predicted resultant temperature at the boundary of the chronic mixing zone is 13.4 °C. This was calculated using a simple mass balance equation as follows: $[13.3(135) + 27.2(.08) + 25.6(.92)]/136 = [13.3(135) + 25.7]/136 = 13.4^{\circ}\text{C}$. This temperature meets the water quality standards.

The highest recorded temperature at GRG002 (from 1988 to 1993) was 19.3°C. The incremental temperature increase allowance ($t = 8/(19.3-4)$) is equal to 0.5°C. With a receiving water temperature of 19.3°C and a combined effluent temperature of 25.7°C the predicted temperature at the edge of the dilution zone is equal to 19.35°C. This was calculated using a simple mass balance equation as follows: $[19.3(135) + 25.7(1)]/136 = 19.35^{\circ}\text{C}$. The temperature increase of 0.05°C is less than the incremental temperature allowance (0.5°C) or the maximum allowable increase of 0.3°C allowed by water quality standards.

Under these conditions there is no predicted violation of The Water Quality Standards. An effluent limitation was determined not to be necessary.

pH--Because of the high buffering capacity of marine water, compliance with the technology-based limits of 6 to 9 will assure compliance with the Water Quality Standards for Surface Waters.

Turbidity--The impact of turbidity was evaluated based on the range of turbidity in the effluent and turbidity of the receiving water. Due to the large degree of dilution and the low turbidity level of the effluent, it was determined that the turbidity criteria would not be violated outside the designated mixing zone.

Toxic Pollutants--Federal regulations (40 CFR 122.44) require NPDES permits to contain effluent limits for toxic chemicals in an effluent whenever there is a reasonable potential for those chemicals to exceed the surface water quality criteria. This process occurs concurrently with the derivation of technology-based effluent limits. Facilities with technology-based effluent limits defined in regulation are not exempted from meeting the Water Quality Standards for Surface Waters or from having surface water quality-based effluent limits.

The following toxics were determined to be present in the process wastewater discharge (001): arsenic, cadmium, copper, lead, mercury, nickel, selenium, silver, and zinc. A reasonable potential analysis (See **Appendix E**) was conducted on these parameters to determine whether or not effluent limitations would be required in this permit. The determination of the reasonable potential for the above toxics to exceed the water quality criteria was evaluated with procedures given in EPA, 1991 at the critical condition. The critical condition in this case occurs in May through October. Valid marine ambient background data was available for metallic parameters (Batelle, 1998). Calculations using all applicable data resulted in a determination that there is no reasonable potential for this discharge (001) to cause a violation of water quality standards. This determination assumes that the Permittee meets the other effluent limits of this permit.

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Several of the Excel® spreadsheet tools used to evaluate a discharger's ability to meet Washington State water quality standards can be found on the Department's homepage at <http://www.wa.gov.ecology>.

Chlorine was assumed to have a reasonable potential to exceed water quality based limitations and therefore a water quality based limit was calculated for chlorine. Effluent limits were calculated using methods from EPA, 1991 as shown in **Appendix F**. Permit limits were rounded to one decimal place.

The resultant water quality based effluent limits for chlorine are as follows:

	Maximum Monthly Average	Daily Maximum
Total Residual Chlorine	0.2 mg/l (based on once per week sampling)	0.4 mg/l

Technology-based limits for total residual chlorine are equivalent to the water quality based maximum monthly average value and are more stringent for the daily maximum permit limit. The most stringent are proposed in the permit.

Stormwater Discharge - Outfall 002

A mixing zone has been established for the stormwater discharge (Outfalls 002) in the NPDES permit. The mixing zone shall extend downstream from the discharge port no greater than 300 feet plus the depth of water at the discharge port and shall extend upstream for a distance no greater than 100 feet. It shall not utilize greater than 25 percent of the flow, and shall not occupy greater than 25 percent of the width of the water body.

Continued monitoring of toxics will provide a database to set limits when stormwater mixing zone guidance or a regulation is available. If future data collected indicate a problem a mixing study may be required to determine the actual mixing available or additional best management practices may be warranted.

WHOLE EFFLUENT TOXICITY

The Water Quality Standards for Surface Waters require that the effluent not cause toxic effects in the receiving waters. Many toxic pollutants cannot be detected by commonly available detection methods. However, toxicity can be measured directly by exposing living organisms to the wastewater in laboratory tests and measuring the response of the organisms. Toxicity tests measure the aggregate toxicity of the whole effluent, and therefore this approach is called whole effluent toxicity (WET) testing. Some WET tests measure acute toxicity and other WET tests measure chronic toxicity.

Acute toxicity tests measure mortality as the significant response to the toxicity of the effluent. Dischargers who monitor their wastewater with acute toxicity tests are providing an indication of the potential lethal effect of the effluent to organisms in the receiving environment.

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Chronic toxicity tests measure various sublethal toxic responses such as retarded growth or reduced reproduction. Chronic toxicity tests often involve either a complete life cycle test of an organism with an extremely short life cycle or a partial life cycle test on a critical stage of one of a test organism's life cycles. Organism survival is also measured in some chronic toxicity tests.

Accredited WET testing laboratories have the proper WET testing protocols, data requirements, and reporting format. Accredited laboratories are knowledgeable about WET testing and capable of calculating an NOEC, LC₅₀, EC₅₀, IC₂₅, etc. All accredited labs have been provided the most recent version of the Department of Ecology Publication # WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria* which is referenced in the permit. Any Permittee interested in receiving a copy of this publication may call the Ecology Publications Distribution Center 360-407-7472 for a copy. Ecology recommends that Permittees send a copy of the acute or chronic toxicity sections(s) of their permits to their laboratory of choice.

The WET tests during effluent characterization (see **Appendix G**) indicate that no reasonable potential exists to cause receiving water acute toxicity, and the Permittee will not be given an acute WET limit and will only be required to retest the effluent prior to application for permit renewal in order to demonstrate that acute toxicity has not increased in the effluent.

The WET tests during effluent characterization indicate that no reasonable potential exists to cause receiving water chronic toxicity, and the Permittee will not be given a chronic WET limit and will only be required to retest the effluent prior to application for permit renewal in order to demonstrate that chronic toxicity has not increased in the effluent.

If the Permittee makes process or material changes which, in the Department's opinion, results in an increased potential for effluent toxicity, then the Department may require additional effluent characterization in a regulatory order, by permit modification, or in the permit renewal. Toxicity is assumed to have increased if WET testing conducted for submission with a permit application fails to meet the performance standards in WAC 173-205-020, "whole effluent toxicity performance standard". The Permittee may demonstrate to the Department that changes have not increased effluent toxicity by performing additional WET testing after the time the process or material changes have been made.

HUMAN HEALTH

Washington's water quality standards now include 91 numeric health-based criteria that must be considered in NPDES permits. These criteria were promulgated for the state by the U.S. EPA in its National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992).

The Department has determined that the applicant's is unlikely to contain organic chemicals regulated for human health and does not contain most chemicals of concern based on several priority pollutant scans and our knowledge of the industry. The only detectable organic, chloroform, does not have a potential to exceed the criteria at the

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chronic mixing zone. A worst case analysis of the discharge using the available mixing zone and the detection limit of the analysis showed some parameters, which if present at the detection limit would exceed human health criteria at the edge of the mixing zone (see **Appendix H**). These parameters, with the exception of arsenic, were not detected and are highly unlikely to be present in this discharge considering the nature of the industry inputs. The discharge will be re-evaluated for impacts to human health at the next permit reissuance.

Arsenic

In 1992 the USEPA adopted risk-based arsenic criteria for the protection of human health for the State of Washington. The criterion for marine waters is 0.14 µg/L inorganic arsenic, and is based on exposure from fish and shellfish tissue ingestion. The freshwater criterion is 0.018 µg/L, and is based on exposure from fish and shellfish tissue and water ingestion. These criteria have caused confusion in implementation because they differ from the drinking water maximum contaminant level (MCL) of 50 µg/L, which is not risk-based, and because the human health criteria are sometimes exceeded by natural background concentrations of arsenic in surface water and ground water.

In Washington, when a natural background concentration exceeds the criterion, the natural background concentration becomes the criterion, and no dilution zone is allowed. This could result in a situation where natural groundwater or surface water used as a municipal or industrial source-water would need additional treatment to meet numeric effluent limits even though no arsenic was added as waste. Although this is not the case for all dischargers, we do not have data at this time to quantify the extent of the problem.

A regulatory mechanism to deal with the issues associated with natural background concentrations of arsenic in groundwater-derived drinking waters is currently lacking. Consequently, the Water Quality Program, at this time, has decided to use a three-pronged strategy to address the issues associated with the arsenic criteria. The three strategy elements are:

1. Pursue, at the national level, a solution to the regulatory issue of groundwater sources with high arsenic concentrations causing municipal treatment plant effluent to exceed criteria. The upcoming revision of the MCL for arsenic offers a national opportunity to discuss how drinking water sources can affect NPDES wastewater dischargers. This discussion should focus on developing a national policy for arsenic regulation that acknowledges the risks and costs associated with management of the public exposure to natural background concentrations of arsenic through water sources.

2. Additional and more focussed data collection. The Water Quality Program will in some cases require additional and more focussed arsenic data collection, will encourage or require dischargers to test for source water arsenic concentrations, and will pursue development of a proposal to have Ecology's Environmental Assessment Program conduct drinking water source monitoring as well as some additional ambient monitoring data. At this time, Washington NPDES permits will contain numeric effluent limits for arsenic based only on treatment technology and aquatic life protection as appropriate.

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- 3. Data sharing.** Ecology will share data with USEPA as they work to develop new risk-based criteria for arsenic and as they develop a strategy to regulate arsenic.

This permit does not include any limitations for arsenic. Arsenic is measured in Tenaska's effluent during Ecology's sampling inspections. It is also measured in the annual sampling inspections of the combined Tosco/Tenaska effluent.

SEDIMENT QUALITY

The Department has promulgated aquatic sediment standards (Chapter 173-204 WAC) to protect aquatic biota and human health. These standards state that the Department may require Permittees to evaluate the potential for the discharge to cause a violation of applicable standards (WAC 173-204-400).

The Department has determined through a review of the discharger characteristics and effluent characteristics that this discharge has no reasonable potential to violate the Sediment Management Standards.

The Tosco NPDES permit will require a sediment recharacterization study when it is issued. Since this discharge is combined the study will evaluate the potential impacts of the Tenaska discharge.

GROUND WATER QUALITY LIMITATIONS

The Department has promulgated Ground Water Quality Standards (Chapter 173-200 WAC) to protect beneficial uses of ground water. Permits issued by the Department shall be conditioned in such a manner so as not to allow violations of those standards (WAC 173-200-100).

Both the stormwater pond and biofiltration swale are lined. The accumulated sludge in the stormwater pond was cleaned out in the fall of 1998. At that time a tear in the liner was discovered and repaired. This Permittee has no ongoing discharge to ground and therefore no limitations are required based on potential effects to ground water.

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and the effluent limitations are being achieved.

The monitoring schedule is detailed in the proposed permit under Condition S.2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

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PERFORMANCE BASED REDUCTION OF MONITORING FREQUENCIES

EPA published guidance in April of 1996 entitled, "Interim Guidance for Performance-Based Reduction of NPDES Permit Monitoring Frequencies". EPA's goal is to reduce the regulatory burden associated with reporting and monitoring on the basis of excellent performance. Ecology adopted a modified policy in the July 1996 revision to the Water Quality Program's Permit Writer's Manual. Total suspended solids, oil & grease, zinc, and total residual chlorine were evaluated using this guidance. The guidance recommends looking at and comparing long term average values to permit limits. In addition to using the approach recommended in the guidance, maximum values were also compared with permit limits. The following table summarizes approximately three years (1/97-10/99) of recent data and baseline, current and proposed monitoring frequencies. In August 1995 the Department of Ecology authorized a reduction in monitoring for total suspended solids (TSS), Oil and Grease, and total zinc. Baseline frequencies reflect the original monitoring frequency established in the permit issued in June of 1992.

Process Wastewater - Discharge 001				
mg/l	Total Suspended Solids	Oil & Grease	Total Zinc	Total Residual Chlorine
Monthly average permit limit in current permit mg/l	20	10	1	0.2
Daily maximum permit limit in current permit mg/l	35	15	1	0.2
Long-term average (January 1997 – October 1999)	3.94	0.34	0.05	0.02
Long-term average/ monthly average permit limit (percent basis)	20	3	5	11
Maximum of the monthly averages	10.2	1.22	0.17	0.07
Maximum Value	25	3.25	0.8	0.14
Current permit monitoring frequency	3/7	2/7	2/7	7/7
Baseline permit monitoring frequency (original permit)	7/7	7/7	7/7	7/7
Performance based monitoring reduction allowance	1/7	1/7	1/7	1/7
Proposed permit monitoring frequency	2/7	1/7	1/7	1/7
Monthly average limit in proposed permit mg/l				0.194
Daily maximum limit in proposed permit mg/l				0.390

LAB ACCREDITATION

With the exception of certain parameters the permit requires all monitoring data to be prepared by a laboratory registered or accredited under the provisions of Chapter 173-50 WAC, *Accreditation of Environmental Laboratories*. The laboratory at this facility is accredited for; total suspended solids (TSS), pH, zinc, total residual chlorine, and the Freon method for oil and grease. Tenaska's laboratory accreditation was renewed by Ecology effective August 31, 1999.

OTHER PERMIT CONDITIONS

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REPORTING AND RECORDKEEPING

The conditions of S3. are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 273-220-210).

SPILL PLAN

The Department has determined that the Permittee stores a quantity of chemicals that have the potential to cause water pollution if accidentally released. The Department has the authority to require the Permittee to develop best management plans to prevent this accidental release under section 402(a)(1) of the Federal Water Pollution Control Act (FWPCA) and RCW 90.48.080.

The Permittee has developed a plan (dated November 1994) for preventing the accidental release of pollutants to state waters and for minimizing damages if such a spill occurs. The proposed permit requires the Permittee to update this plan and submit it to the Department.

SOLID WASTE PLAN

The Department has determined that the Permittee has a potential to cause pollution of the waters of the state from leachate of solid waste. The Permittee submitted an updated solid waste control plan with the permit application.

This proposed permit requires, under the authority of RCW 90.48.080, that the Permittee submit an updated solid waste plan with the application at the time of permit renewal. The plan is designed to prevent solid waste from causing pollution of the waters of the state.

TREATMENT SYSTEM OPERATING PLAN

In accordance with state and federal regulations, the Permittee is required to take all reasonable steps to properly operate and maintain the treatment system (40 CFR 122.41(e)) and WAC 173-220-150 (1)(g). An updated Treatment System Operating Plan (TSOP) was submitted in September of 1998, was reviewed and found to be complete. It has been determined that the implementation of the procedures in the TSOP is a reasonable measure to ensure compliance with the terms and limitations in the permit. The proposed permit requires that an updated TSOP be submitted with the permit application for renewal.

BEST MANAGEMENT PRACTICES

The Clean Water Act provides for water pollution controls, such as Best Management Practices (BMPs) to supplement effluent limitation guidelines. Pursuant to RCW 90.48 and sections 304 and 402 of the Clean Water Act, BMPs may be incorporated as permit conditions. BMPs are actions or procedures to prevent or minimize the potential for the release of pollutants or hazardous substances in significant amounts to surface waters.

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To ensure the proper operation of the stormwater management pond Best Management Practices will be included in the permit.

GENERAL CONDITIONS

General Conditions are based directly on state and federal law and regulations and have been standardized for all individual industrial NPDES permits issued by the Department.

PERMIT ISSUANCE PROCEDURES

PERMIT MODIFICATIONS

The Department may modify this permit to impose numerical limitations, if necessary to meet Water Quality Standards for Surface Waters, Sediment Quality Standards, or Water Quality Standards for Ground Waters, based on new information obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The Department may also modify this permit as a result of new or amended state or federal regulations.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, protect human health, aquatic life, and the beneficial uses of waters of the State of Washington. The Department proposes that this proposed permit be issued for 5 years.

REFERENCES FOR TEXT AND APPENDICES

Crecelius, Eric

1998. Background Metals Concentrations in Selected Puget Sound Marine Receiving Waters. Batelle Marine Services Laboratory.

Environmental Protection Agency (EPA)

1992. National Toxics Rule. Federal Register, V. 57, No. 246, Tuesday, December 22, 1992.

1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001.

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1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water. EPA/600/6-85/002a.

1983. Water Quality Standards Handbook. USEPA Office of Water, Washington, D.C.

Washington State Department of Ecology.

1994. Permit Writer's Manual. Publication Number 92-109

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

The Department will publish a Public Notice of Draft (PNOD) on Wednesday **July 5, 2000** in the **Bellingham Herald** and the **Westside Record-Journal** to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the office listed below. Written comments should be mailed to:

Nancy Kmet
Department of Ecology
Industrial Section
PO Box 47706
Olympia, WA 98504

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the thirty (30) day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least thirty (30) days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing (WAC 173-220-100).

The Department will consider all comments received within thirty (30) days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, (360) **407-6941**, or by writing to the address listed above.

Nancy Kmet wrote this permit and fact sheet.

APPENDIX B--GLOSSARY

Acute Toxicity--The lethal effect of a compound on an organism that occurs in a short period of time, usually 48 to 96 hours.

AKART-- An acronym for "all known, available, and reasonable methods of treatment".

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation --The average of the measured values obtained over a calendar month's time.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD₅--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD₅ is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of a treatment facility.

Chlorine--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Chronic Toxicity--The effect of a compound on an organism over a relatively long time, often 1/10 of an organism's lifespan or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

Clean Water Act (CWA)--The Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Additional sampling may be conducted.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots).

Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Critical Condition--The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.

Dilution Factor--A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the percent effluent fraction e.g., a dilution factor of 10 means the effluent comprises 10% by volume and the receiving water 90%.

Engineering Report--A document which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab Sample--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Major Facility--A facility discharging to surface water with an EPA rating score of > 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

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Maximum Daily Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL)--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

Minor Facility--A facility discharging to surface water with an EPA rating score of < 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Mixing Zone--An area that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows procedures outlined in state regulations (Chapter 173-201A WAC).

National Pollutant Discharge Elimination System (NPDES)--The NPDES (Section 402 of the Clean Water Act) is the Federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the State of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/State permits issued under both State and Federal laws.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Quantitation Level (QL)-- A calculated value five times the MDL (method detection level).

Responsible Corporate Officer-- A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures (40 CFR 122.22).

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Suspended Solids (TSS)--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Upset--An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

Water Quality-based Effluent Limit--A limit on the concentration of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.